on cell opening behavior and flow behavior in the foam mold such that graft polyol containing polyurethanes having good cell opening behavior and flow behavior are sought.

The claimed invention addresses the problem by providing a graft polyol comprising small particles and large particles having a bimodal particle size distribution. Applicants have discovered that a graft polyol having a bimodal particle size distribution in which the **peaks do not overlap** having a small particle and large particle distribution as claimed, provides for advantageous properties when incorporated into a polyurethane composition. Such a graft polyol is nowhere disclosed or suggested in the cited prior art of record.

The rejection of claims 1, 2 and 4-17 under 35 U.S.C. 112, second paragraph is respectfully traversed.

Applicants respectfully submit that the metes and bounds of the term "do not overlap" as claimed are clear to those of ordinary skill in the art. The examiner agrees in stating "However, rejection is maintained. Although **one can readily ascertain what is meant by 'do not overlap' in the context of the instant invention**." (page 2, last full paragraph of outstanding official action, emphasis added)

The examiner's rejection appears to be based on his lack of familiarity with the claimed test methods for determining particle size distribution.

Applicants respectfully submit that the metes and bounds of particle size distributions which do not overlap as determined by the Fraunhofer diffraction method in combination with polarization intensity differential scattering is clear to those of ordinary skill in the art as both techniques are well known to those of ordinary skill in the art.

For example, Hirleman, Jr. U.S. 5,007,737 claims a particle sizing system using Fraunhofer diffraction patterns. Claim 1 of this patent, which issued on April 16, 1991, reads in-part as follows:

> 1. A particle sizing system for determining particle size distributions in liquids and gases in a particle field using **Fraunhofer diffraction patterns**, said particle

sizing system comprising:

a means for illuminating said particle field with **a Fraunhofer diffraction pattern**, said **Fraunhofer diffraction pattern** having a center axis;...

This patent is presumed to be valid and therefore enabled. 35 U.S.C.§ 282

Thus, contrary to the view of the examiner, Fraunhofer diffraction is a well known technique which is known to those of ordinary skill in the art for the purposes of determining particle size distribution.

Polarization intensity differential scattering is also a well known technique used to determined particle size and is used in the Beckman Coulter LS230 particle size analyzer. Beckman Coulter represent in the attached literature that "the instruments can be used with confidence, and that the particle size distributions it produces accurately reflect the sample material." Thus, contrary to the view of the examiner, polarization intensity differential scattering is a well known technique which is known to those of ordinary skill in the art for the purposes of determining particle size distribution.

Since each of Fraunhofer diffraction and polarization intensity differential scattering are well known techniques used to accurately determine particle size distribution, independent of the examiner's conclusion that "one can readily ascertain what is meant by 'do not overlap' in the context of the instant invention," the metes and bounds of the claimed invention are clear to those of ordinary skill in the art. The examiner's assertion of the techniques being "foreign or non-readily recognizable test standards" is simply erroneous. There is no need to supplement the record with the specifications for performing the test standard methods. Withdrawal of the rejection under this section of the statute is respectfully requested.

The rejection of claims 16 and 17 under 35 U.S.C. 112, second paragraph is respectfully traversed.

Applicants respectfully submit that the metes and bounds of the term "peaks of the large and small particles measured by a light scattering method" are clear to those of ordinary skill in the art such that the claim is not indefinite.

Applicants respectfully submit that those of ordinary skill in the art can determine whether the particle size distribution overlaps by a light scattering method and it is not necessary to determine which light scattering methods are included or excluded in order to understands the metes and bounds of the claims. Claim 16 simply recites that the peaks of the large and small particles do not overlap, as measured by a light scattering method. Since those of ordinary skill in the art are able to determine particle size distribution by a light scattering method, the metes and bounds of a method in which the particle size distributions do not overlap is clear. Moreover, claim 17 which recites specific light scattering techniques is even more clear. Withdrawal of the rejection under this section of the statute is respectfully requested.

The rejection of claims 1, 2 and 4-17 under 35 U. S. C. 112, first paragraph is respectfully traversed.

Applicants respectfully submit that those of ordinary skill in the art, having read applicants' original disclosure, would be convinced that applicants were in possession of a graft polyol comprising small particles and large particles having a bimodal particle size distribution, in which peaks of the large and small particles do not overlap and in which **the large particles have a larger particle size than the small particles**. Communication of such possession is clear by the recitation of 1) small particles having a particle diameter of from 0.05 to 0.7 μm; 2) large particles having a particle diameter of from 0.4 to 5.0 μm; and 3) a **bimodal** particle size distribution. Explicit in the term bimodal is the existence of **two** particle size distributions (e.g. two modes). Having clearly expressed possession of a polyol having two particles size distributions of small particles and large particles, it is also explicit

that one particle size distribution is larger and the other is smaller. This is clearly communicated to those of ordinary skill in the art through their understanding of relative size distributions. Accordingly, applicants' amendment of December 28, 2006 to recite "wherein said large particles have a larger particle size than said small particles" is clearly supported by applicants' prior description such that the amendment does not introduce new matter into applicants' specification.

Information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter. M.P.E.P. § 2163.06

Mere rephrasing of a passage does not constitute new matter. Accordingly, a rewording of a passage where the same meaning remains intact is permissible *In re Anderson*, 471 F.2d 1237, 176 USPQ 331(CCPA 1973) M.P.E.P. § 2136.07 I

As applicants' amendment merely rephrased the explicit relative sizes of the two particle size distribution, applicants' amendment did not introduce new matter and accordingly, withdrawal of the rejection under 35 U.S.C. §112, first paragraph is respectfully requested.

The rejection of claims 1, 2 and 4-17 under 35 U.S.C. § 103(a) over EP 786,480 in view of Perry et al. (U.S. 6,127,443) is respectfully traversed.

None of the cited prior art of record discloses or suggests a graft polyol having a bimodal particle size distribution in which the peaks of the large and small particles do not overlap.

EP '480 merely describes a polymer polyol having a relatively small and having a narrow particle size distribution (page 1, lines 3-5 and page 3, lines 2-7). In describing a polymer polyol having a small particle size and a narrow particle size distribution, there is no suggestion of a graft polyol having a bimodal particle size distribution in which the peaks do not overlap.

Perry et al. merely describes a polyol component which is **at least bicompositional** having at least one high molecular weight portion and one low molecular weight portion (column 3, lines 17-19). There is no disclosure in this reference as to a bimodal particle size distribution in which the peaks do not overlap.

A recitation of bicompositional is not a suggestion of a bimodal particle size distribution. The term bicompositional refers to the qualitative nature of the composition components such that there are components of two different compositions. A bimodal particle size describes the average particle size of the particles of the composition such that there are two peaks, describing the particle size distribution. Differences in composition do not suggest differences in particle size distribution.

Moreover, even if Perry et al. were to have described a bimodal particle size distribution, there is no motivation to modify the polymer polyol of EP '480 to provide a bimodal distribution as to do so would be contrary to the express teachings of EP '480.

EP '480 describes a polymer polyol having a small particle size and **a narrow particle size distribution**. A narrow particle size distribution is a statement as to the desirability of uniform properties for the polymer particles. A bimodal particle size is inconsistent with a narrow particle size distribution as a bimodal particle size has two particle size distributions and therefore is nearly the opposite of a narrow particles size distribution. It would not be possible to modify the disclosure of EP '480 and provide a bimodal particle size distribution as to do so would destroy the essential teachings of the primary references. Obvious modifications can not fly in the face of the express disclosure of the reference. As such the combination of cited references does not make obvious a graft polyol having a bimodal particle size distribution.

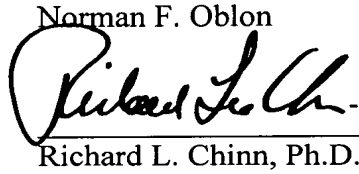
In contrast, the claimed invention is directed to a graft polyol having small and large particles having a bimodal particle size distribution in which the peaks of the large and small particles do not overlap.

While the examiner asserts that a blend of polymers is suggestive of a bimodal particle size distribution, applicants again remind the examiner that the secondary reference suggests the use of two polymer composition, not a two polymers having different particle size distributions. Moreover by combining the teachings of the two references, one would use two polymers **of the same particle size distribution,** providing a bicompositional polyol having **a narrow particle size distribution**. As the combined teachings of the cited prior art fails to disclose or suggest a bimodal particle size distribution in which the peaks do not overlap, the claimed invention is clearly not obvious from these references and accordingly withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



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PIDS--Polarization Intensity Differential Scattering (Beckman Coulter exclusive)

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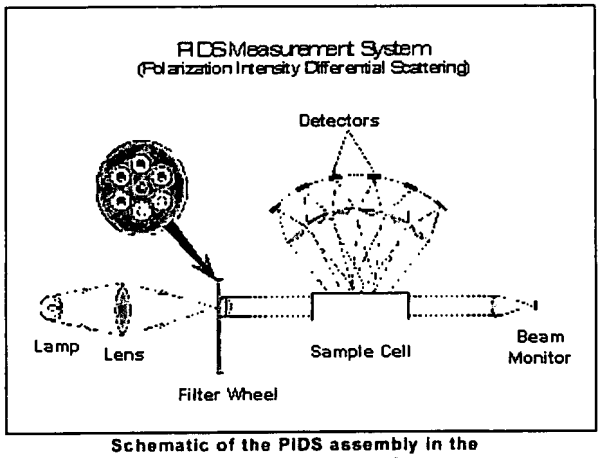
PIDS (Polarization Intensity Differential Scattering) uses three wavelengths of light, filtered for polarization in the vertical and the horizontal planes. Six detectors (in addition to the 126 detectors used for measuring scattered light) are positioned at around 90 degrees to the direction of the light path to measure the differential intensity between scattered light of vertical and horizontal polarizations. A total of 42 measurements are made at six scattering angles and three wavelengths, each at two polarizations. The combination of multiple wavelengths and two polarizations provides information that differentiates between sub-micron particle sizes and dramatically increases resolution.



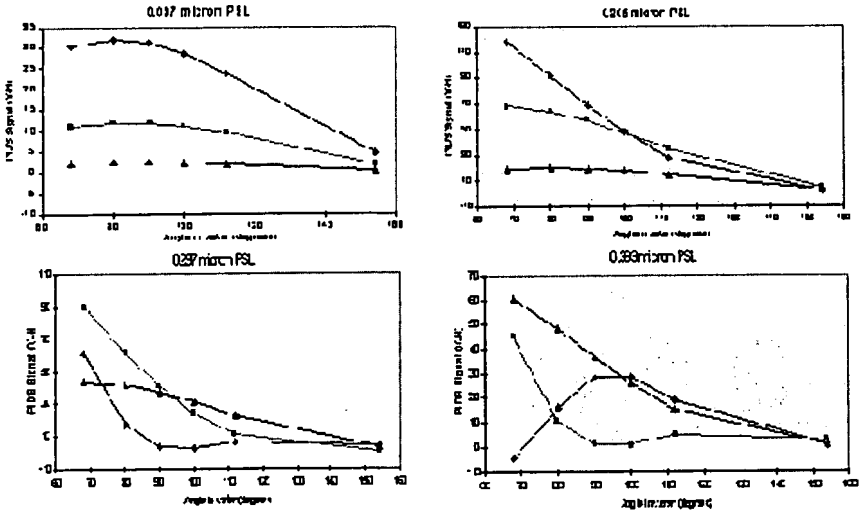
Schematic of the PIDS assembly in the Beckman Coulter LS230 Particle Size Analyzer

Although PIDS uses a second light source split into "flavors," the scattering of these light beams by particles is described by the same Mie theory as laser scattering, so all scattering information is converted to particle size using the same algorithm in a single operation.

The resolution and the accuracy of PIDS has been tested with materials produced by the National Institute of Standards and Technology (NIST), Bureau of Community Reference (BCR), and Standard Reference Materials (SRMs).

The performance of the LST 100Q/200/230 Series Laser Diffraction Particle Size Analyzer and the LST 13 320 Series Laser Diffraction Particle Size Analyzer relative to traceable standards indicate that the instruments can be used with confidence, and that the particle size distributions it produces accurately reflect the sample material.

PIDS Patterns for Submicron PSL (*FINGERPRINTS*)



These graphs show how minor size changes can show drastic differences in data recorded by PIDS proving the unsurpassed resolution of PIDS.

One might expect to see very similar scattering patterns from particles so close in size range, but PIDS clearly identifies these very distinctly. This "fingerprinting" of submicron particles can only be produced with PIDS, something our competitors do not have.

Additional Information

- Enhanced Laser Diffraction
- LST 100Q/200/230 Series Laser Diffraction Particle Size Analyzer
  LST 13 320 Series Laser Diffraction Particle Size Analyzer
  Particle Characterization Literature
  Particle Characterization Technology

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